



Castilleja linariifolia

Castilleja

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Rising from the Ashes - Payson's Milkvetch

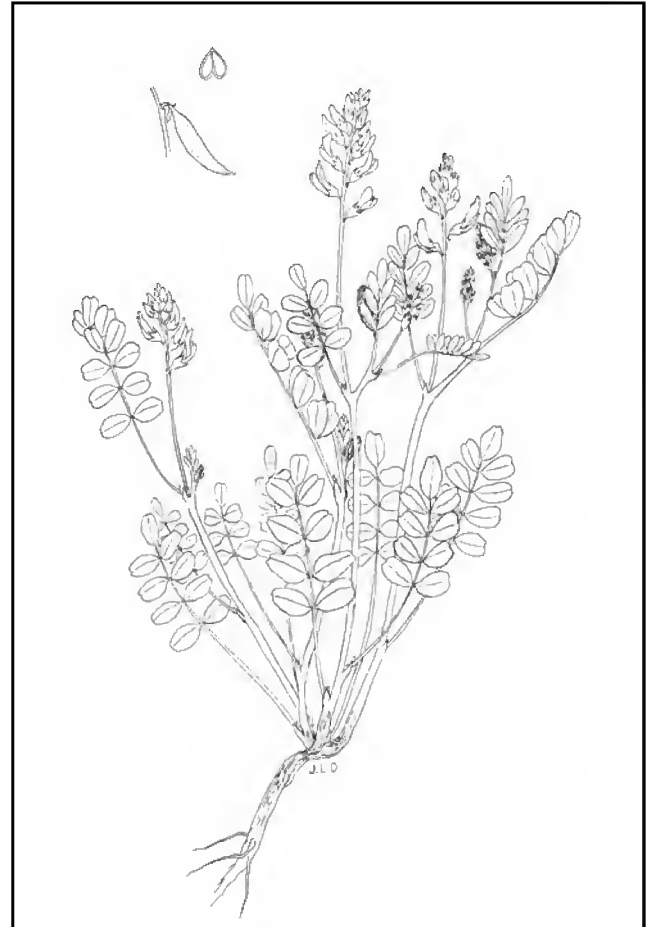
By Bonnie Heidel

Payson's milkvetch (*Astragalus paysonii*) emerged from the ashes in 2011 at the long-lost type locality in Bridger-Teton National Forest. It was originally discovered on a midsummer day in 1922 by Edwin and Lois Payson, and was later named for them by Rydberg (1927). They described the setting as burned forest.

In 1941, Payson's milkvetch was found in the Clearwater Mountains of north-central Idaho. Regional floras described it as "rare and local" (Hitchcock and Cronquist 1961) in the two states. Thus, it was on the first list of potentially endangered or threatened plants ever produced in the country (Smithsonian 1978) and placed on the sensitive species lists of the U.S. Forest Service Intermountain Region (USDA FS 1994) and of the Northern Region.

Surveys of potentially threatened and endangered plant species were conducted on the Bridger-Teton National Forest by John and Leila Shultz in 1978, finding new locations of Payson's milkvetch in the Wyoming Range. But they searched for it three days at the type locality to no avail: "We concluded with considerable confidence that this locality was no longer a site for *Astragalus paysonii*" (Shultz and Shultz 1978).

Botanists expanded surveys for Payson's milkvetch in Idaho (Lorain 1990) and in Wyoming (Fertig and Marriott 1993). The latter documented new and persisting populations at over 30 sites in both the Wyoming and Salt River ranges, but Payson's milkvetch was almost restricted to man-made disturbances like clearcuts and roads, often in very low numbers. Each botanical researcher drew similar conclusions that Payson's (*continued, p. 11*)



Above: *Astragalus paysonii*, by Jane Dorn, from: Dorn, R.D. 1980. *Illustrated Guide to Special Interest Vascular Plants of Wyoming*. U.S. Fish and Wildlife Service and Bureau of Land Management. This illustration was also featured in an earlier newsletter (Dorn and Clark 1994).

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WYNPS News - SPECIAL EVENTS

REGISTER NOW for the Annual Meeting, 22-25 June, in Laramie. This meeting will be held in conjunction with the American Penstemon Society, and registration is through their web site (<http://apsdev.org/aps/meetings.html>) or by mailing the enclosed form. Registration is open to current members of the Wyoming Native Plant Society and/or the American Penstemon Society only, so please renew for 2012 if you haven't already done so. Registration will end on May 31st or when the maximum number of registrations is reached, whichever comes first.

Please note that we are sponsoring an optional field trip on Monday to see the Blowout Penstemon. You can sign up for this trip at no cost whether or not you register for the rest of the meeting. To sign up for Monday only, send us an email: wynps@wynps.org.

ALSO MARK YOUR CALENDAR for a Wyoming Range hike adventure on July 14, a joint hike of Wyoming Native Plant Society and The Nature Conservancy. We will meet at the Bridger-Teton National Forest Boundary east of Alpine and caravan up the Greys River to headwaters of Sheep Creek. The route skirts the crest of the Wyoming Range following the Wyoming Range Trail. The hike will be lead by Orval Harrison, author of *Wildflowers of the Star Valley and Tri-Basin Country*. See more information in this issue.

A special hike mailing with ALL WYNPS hikes around the state will come out in spring. If interested in leading a hike, please contact Amy or Bonnie. ~Ann

Treasurer's Report: Balance as of 17 Feb:
Scholarship = \$3,492.50; General \$4,954.99; Total = \$8,447.49.

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Favorite re-runs and novelties: We're pleased to re-print striking images like that of *Astragalus paysonii* (by Jane Dorn) and try out a new image for our State Flower, *Castilleja linariifolia* (by Bonnie Heidel).

Message from the Webmaster

The Wyoming Native Plant Society has a new website! Please update your web browsing bookmark from www.uwyo.edu/wyndd/wnps to www.wynps.org. In the past our website has been hosted on the University of Wyoming and Wyoming Natural Diversity Database servers, much like the hemi-parasite that is our mascot. However, our new web site is autotrophic...with all the same information and announcements that you have come to expect.

Our URL is WYNPS (because Washington Native Plant Society already claimed the WNPS domain) so you will see these five letters used as our abbreviated name from now on.

~Melanie Arnett

P.S. Any message sent to the Wyoming Native Plant Society email address, wynps@wynps.org, will simultaneously reach me, Ann and Bonnie, so feel free to use it if you're not sure where to send questions or comments. There's still a bit of web construction, but we are definitely in business - comments are welcome any time!



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WYNPS Board - 2012

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Contributors to this Issue: Melanie Arnett, Ann Boelter, Bernie Bornong, Jane Dorn, Robert Dorn, Bonnie Heidel, Amy Taylor.

Mountain Lady's Slipper Monitoring on Bighorn National Forest

By Bernie Bornong, Bighorn NF

(Editor's note: Attendees of the 2011 WYNPS Annual Meeting will remember the stunning glimpses of Mountain Lady's Slipper just outside of Story, WY along South Piney Creek, site of the following study.)

Mountain Lady's Slipper - South Piney Creek



Mountain Lady's Slipper (*Cypripedium montanum*) is a sensitive species known from three locations on the east side of the Bighorn National Forest, and from several other locations adjacent to the NF. The National Forest Management Act requires that individual Forests provide for diversity of plant and animal communities. The practical application of managing for species diversity is that NFs must maintain viable populations of native species.

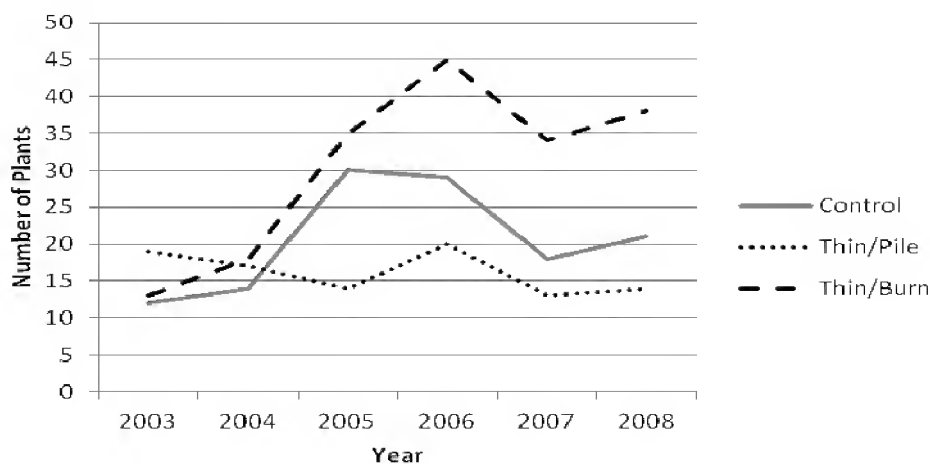
So, when a prescribed burn and thinning for hazardous fuels reduction project was proposed west of Story where the lady's slipper was known to occur, resource managers questioned what the effects would be on the Lady's slipper populations.

Greg Karow, the Bighorn NF ecologist, researched the literature for fire effects on this species, but there was very little published information. In lieu of trying to "estimate" what the future effects might be, he decided to monitor the actual effects of these activities upon these populations. 1/100th acre fixed plots were established in South Piney Creek and

along the Story-Penrose trail. A control plot, which was not treated, was established at each location. Data collected included general plot information, including associated species; number of Lady's Slipper plants, stems, height, flowers per stem, and number of flowers. A summary of the number of plants that occurred on the South Piney Creek plots between 2003 and 2008, inclusive, is shown below in Figure 1.

The habitat in South Piney Creek is a Ponderosa pine cover type, which historically burned periodically. One would suspect that the native species inhabiting that area would be adapted to periodic fire. This is supported by results showing that the number of plants increased following the thinning and burning treatment. This is not just due to plants getting more light after thinning. In fact, the number of plants decreased slightly after the thinning was followed by hand piling and burning the slash. The thinning followed by piling is different in that the treated fuels were burned in discrete piles, as opposed to a broadcast burn that treated the entire ground surface. Most of the lady's slipper plants would not have been directly affected by the fire.

Figure 1. Mountain lady's slipper numbers under prescribed burn treatment at South Piney



...The outcome of this Story has a happy ending, with healthy orchid populations above town and reduced fire hazards in town.

2012 WYNPS/APS Annual Meeting

June 22-25, 2012 in Laramie, Wyoming



Penstemon saxosorum

FIELD TRIPS

There are three weekend field trips offered (June 22-24), plus an additional field trip to a *Penstemon haydenii* site on Monday. Registration is required for the June 22-24 events!

Dodge Mountain - This trip will take us north of Laramie on Hwy 30, to just beyond the village of Rock River. Turning right onto Fetterman Rd, we'll head past Wheatland Reservoir #3 to Dodge Mountain, which is not a mountain, but a hill on the western flank of the Laramie Range, home to *Sphaeromeria simplex* and many other cushion plants like *Eriogonum acaule*. *Sphaeromeria simplex*, aka Laramie false sagebrush, is a SE Wyoming endemic restricted to limestone. Penstemons at this site include *P. eriantherus* and *P. radicosus*. We'll pass Wheatland Reservoir #2, and take a different route back to Hwy 30. There is a possibility that we'll be able to stop by an active dinosaur quarry on our way out.

Laramie Range - For this excursion, we'll head into the hills east of Laramie to visit Vedauwoo, an impressive exposure of 1.4 billion year old granite,

and points beyond. Our stop at Vedauwoo will include a hike at Turtle Rock, which includes *Penstemon procerus*, *P. strictus* and *P. virens*. We hope to also see *P. eriantherus* var. *cleburnei*. Backroads south will lead us past *P. rydbergii* to Hwy 287, where we'll turn towards Colorado and the summit of Pumpkin Vine Pass, to look for *P. glaber* var. *alpinus*. Turn around, and we'll head north again to Stevenson Rd, and turn off to visit the ranch of Dan Tinker and Gail Stakes. Here we can stretch our legs, find *P. secundiflorus*, *P. eriantherus* var. *eriantherus*, and others. If we're fortunate, we'll see *P. angustifolius* var. *caudatus*, which typically blooms in May and early June, and/or *P. larcifolius* var. *exilifolius*, which usually blooms in July.

Snowy Range and Saratoga - The Snowy Range is a must-see destination when in the Laramie area. A paved road crosses the range, reaching an elevation of about 10,800 ft. The highest peak, Medicine Bow Peak, is a hair over 12,000 ft. Our route will take us from Laramie on Hwy 130 to Centennial (population 100). We'll make a few stops just above Centennial to see *P. secundiflorus*, *P. strictus*, *P. radicosus* and a beautiful roadcut display of *P. virens*. *Penstemon whippleanus* is common in the Snowies, but we'll only see it if there's a low-elevation plant in bloom. Libby Flats overlook at the top of the highway will give us an opportunity to view several more mountain ranges in the distance, and alpine forget-me-nots at our feet. Expect lots of snow and cool breezes up there! Cruising down the west side of the Snowies, we may even see *P. palmeri* (not a native!) on our way to Saratoga. This *Penstemon gibbensii* population is not only farther east than other known populations of the species, it is the only one to bloom in June. Plus, the plants are on ridges above the North Platte River, and the view is panoramic. From there, we go north to pick up I-80, and speed back to Laramie.

Monday optional trip to Ferris Dunes - The Wyoming Native Plant Society is sponsoring a Monday field trip to the Ferris Dunes, to view *Penstemon haydenii*, blowout penstemon, Wyoming's only federally listed Endangered plant species. The discovery of *P. haydenii* in Wyoming in 1996 may actually represent its re-discovery in the footsteps of F.V. Hayden over a century earlier. We will travel west from Laramie to Sinclair, then north, past Kortess Dam on the North Platte River, to the segment of river affectionately known to anglers as Miracle Mile. From there we head west, with special permission to cross private property on two-track roads, towards the eastern edge of the Ferris Mountains and the open sand dunes that constitute blowout penstemon habitat. This is a long trip, but worth your time, for the large-flowered and aromatic penstemon, the unusual dune vegetation, and the grand landscape of mountains and sand. From Laramie to Sinclair is 94 miles, all interstate highway. The distance from Sinclair to the Ferris Dunes is shorter (50-60 miles), but will take nearly two hours. Once there, you will be within a short walk of the nearest plants, or you can really stretch your legs to visit plants on steep slopes habitat.

SCHEDULE

Friday–UW Berry Biodiversity Conservation Center

Board meeting 1-3
Registration 3-5
Green roof and Herbarium tours!
Happy hour and hors d'oeuvres 5-6
6 pm – Speaker - Dennis Knight

Saturday - fieldtrip

Early morning – gather for fieldtrips
Return from trips around 4 or 5 pm
Happy hour 5:30-6:30

6:45-7:30 banquet – University of Wyoming Union
7:30 Speaker - Craig Freeman, *Penstemon* author in *Flora of North America*

Sunday – field trip

Early morning – gather for field trips
Return from trips around 4 or 5
WYNPS Board Meeting over dinner!

Monday - fieldtrip

Optional field trip to *Penstemon haydenii* in Ferris Dunes (a repeat of a very popular 2007 hike event)

REGISTRATION – REQUIRED FOR JUNE 22-24, 2012

There are two registration levels, with or w/o the Saturday banquet. The banquet choices will be either roast chicken or grilled salmon. Registration is restricted to members of the American Penstemon Society and/or Wyoming Native Plant Society – APS is handling registration! They accept checks or Money Orders (no cash please). You can also register online thru APS (<http://apsdev.org/aps/meetings.html>). Fees cover facilities, etc.

NAME: _____

STREET ADDRESS: _____

CITY; STATE ZIP: _____

PHONE; EMAIL ADDRESS: _____

☐ LIST ONLY MY NAME IN THE PARTICIPANTS LIST (not address or phone)

EMERGENCY CONTACT: _____

HEALTH ISSUES?: _____

BANQUET SELECTION:

☐ CHICKEN

☐ SALMON

Note – fill one form per attendee. You may send a single check for more than one registration.

REGISTRATION LEVEL (CHECK ONE);

☐ \$130 (includes Saturday Banquet)

☐ \$100 (No Banquet please)

Total Payment Amount Enclosed:

\$_____ (Payable to 'American Penstemon Society')

PREFERRED FIELD TRIPS (PICK 2);

☐ LARAMIE RANGE

☐ SNOWY RANGE /SARATOGA

☐ DODGE MOUNTAIN

DO YOU INTEND TO PARTICIPATE IN THE MONDAY OPTIONAL TRIP?

☐ YES

☐ NO

Please mail the registration form (this page) and payment to; **Hugh MacMillan, 1367 Cathedral Rock Drive, Sedalia, CO 80135**. Note that WYNPS is sponsoring the optional Monday field trip to Blowout Penstemon. You can sign up for this trip whether or not you register for the rest of the meeting. To sign up for Monday only, send an email: wynps@wynps.org. Please contact Ann Boelter (amb749@yahoo.com) or Dorothy Tuthill (dtuthill@uwyo.edu) if you have any questions.

Copies of the book, *Wildflowers of Star Valley and the Tri-Basin Country* (Harrison 2010) will be available for sale on the hike at a cost of \$24.75 (checks only). *Or plan ahead!* They are also available at:

- Rocky Mountain Herbarium (Laramie)
- Bridger-Teton NF office (Afton)
- Valley Bookstore (Jackson)
- Dog-eared Books (Afton)

...or from the author

(orvalharrison@hotmail.com). See the recent review in the Oct 2011 issue of *Castilleja* 30(3).



Right: Colorado columbine (*Aquilegia coerulea*,) from: *Wildflowers of Star Valley and the Tri-Basin Country*, by Orval Harrison, reprinted with permission of the author.

WYOMING RANGE ADVENTURE

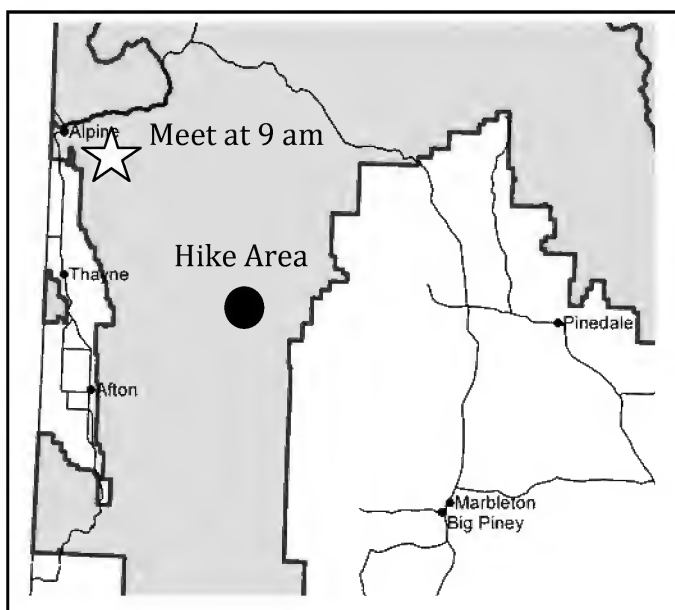
Join Wyoming Native Plant Society and The Nature Conservancy for a joint midsummer hike in the Wyoming Range, on Saturday, July 14! We are honored to have Orval Harrison as trip leader, author of *Wildflowers of Star Valley and the Tri-Basin Country*.

We will hike the heart of the Wyoming Range at the head of Sheep Creek. The walk will follow the Wyoming Range Trail through Englemann spruce forest to the toe of Triple Peak, an easy 1 mile hike. Jumping across the Wyoming Range divide and the county lines at McDougal Gap (8200 ft), we'll take a jaunt northward for 0.5 mile to a windswept ridge, looking for plants unique to this area and Wyoming-wide favorites.

MEETING TIME

9:00 am at the Bridger-Teton Nation Forest boundary parking lot, just east of Alpine, WY on the Greys River Road. This is for people who are coming from the north, have not been on these roads before, or are coming by highway. We will drive from there up the Greys River Road to the Sheep Creek Road (app. 30 miles; app. 1 hr) where we meet up with the rest of attendees. We encourage carpooling from the parking lot !

Alternatively, meet at **10:00 am** at the junction of the Greys River Road and Sheep Creek Road. This is for people coming from Pinedale or camping in the area. It can be reached from US Hwy 189 about 2 miles south of Daniel, turning onto the Rye Grass Road. This eventually forks; take the North Cottonwood Creek Road to McDougal Gap, and continue down the Sheep Creek Road to its intersection with the Greys River Road – *this route requires maps and more time!*



Be prepared with good hiking boots, bag lunch and water, and clothes for changes in weather. This day-hike ends with return to Alpine about 5:00 pm. Open to the public; no registration required.

Growing Native Plants

Part 3. Deciduous Trees

By Robert Dorn

Deciduous trees are used mostly for shade. The faster growing ones usually have a shorter life span than the slower growing ones, but even the fast growing ones often equal or exceed a human life span. The following nine native species are the most desirable for landscaping.

Acer grandidentatum, Bigtooth Maple, is a small tree (or large shrub if allowed to produce numerous stems from near the base), reaching 30 feet high and as wide at maturity. It grows naturally on mountain slopes on the western edge of the state. It is relatively slow growing. We transplanted a small seedling near Cheyenne and it grew up to about 15 feet high in about 15 years. In the fall the leaves turn orange to pale red. It likes moist, well-drained, fertile soil and full sun or light shade. It is drought tolerant when mature. It can be grown from seed that has been cold stratified for 30 days and is in the nursery trade.



Acer grandidentatum, Lincoln County

Celtis occidentalis, Hackberry, is a larger tree up to 60 feet high and 30 feet wide. In Wyoming it is found in small numbers near the northern and eastern borders. It may be slow to establish, but once established, will grow moderately fast. In the fall the leaves turn yellow. It likes moist, well-drained deep soil and is tolerant of drought, heat, alkalinity, and wind. The leaves emerge in spring later than for many of our native trees. The leaves often have nipple galls which may be unsightly but do not harm the tree. It can be grown from seed after removing

the fruit pulp and cold stratified for 60 to 90 days. It is also in the nursery trade. It will do best at elevations below 7000 feet.



Celtis occidentalis, Sioux County, Nebraska

Populus, Cottonwoods and Aspen, are all relatively fast growing trees and thus desirable for shade trees. All of our cottonwoods are easily grown from hardwood cuttings. In winter cut off the last two year's growth, twigs of 8 to 15 inches long, place in water in a large jar up to about half their length, and add a little rooting hormone. When roots are well developed, transplant to pots for later transplanting outside. If you dislike the "cotton" that the catkins produce, select staminate trees, but be aware that staminate catkins may stain whatever is under the tree. They are all tolerant of poor soils but need adequate moisture. Our five native species will not all do well over the entire state so you need to choose the best ones for your area.

Populus tremuloides, Aspen, is the smallest of the five species reaching up to 45 feet high and 20 feet wide. It is common in all the mountains of the state. The leaves turn bright yellow or gold or occasionally reddish or orange in the fall depending on the clone from which it is derived. It is susceptible to several diseases and insect infestations in warmer areas of the state so is best planted above 6000 feet and even then on the north side of a building. The trees often sucker extensively and may become chloritic in alkaline soils. Our cottonwoods are often a better choice.

Populus acuminata, Lanceleaf Cottonwood, is best for elevations below 7000 feet and grows to 60 feet high and 25 feet wide. It is found naturally in the foothills and basins and on the plains along rivers

and lake shores. The leaves turn yellow in fall. It tolerates cold, heat, and drought when established but tends to lose branches in high wind areas. It can be grown easily from hardwood cuttings and is in the nursery trade.



Populus tremuloides, Weston County

Populus angustifolia, Narrowleaf Cottonwood, is best for elevations between 5000 and 9000 feet. It grows up to 60 feet high and 25 feet wide. It is found naturally in all of our mountains and extends into the basins and plains along rivers and lake shores. The leaves turn golden yellow in fall. The species can be grown from seed or hardwood cuttings and is in the nursery trade.

Populus balsamifera, Balsam Poplar, is best for elevations between 6000 and 9000 feet, grows to 100 feet high and 25 feet wide, and likes a cool location. It is found naturally in all of our mountains. The leaves turn bright yellow in fall. It can be grown from seed or hardwood cuttings. It may be hard to find in the nursery trade.

Populus deltoides var. *occidentalis*, Plains Cottonwood, and var. *wislizeni*, Basin Cottonwood, are best for elevations below 6000 feet. They grow up to 60 feet high and 40 feet wide. They are found naturally along rivers and lake shores, var. *occidentalis* on the plains and in the Big Horn and Wind River basins, var. *wislizeni* in the Washakie Basin. They tolerate cold, heat, drought, and alkalinity once established. Older trees often lose limbs in high winds. The leaves turn yellow in fall. They are easy to grow from seed or hardwood cuttings.



Populus acuminata, Laramie Park



Populus angustifolia, Albany County



Populus balsamifera, Pennington County, SD



Populus deltoides, Fort Laramie

Available cultivars may be hybrids. It will do best below 7500 feet.



Quercus macrocarpa, Crook County

Quercus macrocarpa, Bur Oak, is a slow growing tree up to 130 feet high and 30 feet wide under ideal conditions. It is found naturally in the Black Hills. It likes moist, well drained soil but is drought tolerant once established. The leaves turn yellow, orange, pale red, or tan in fall. It can be grown from seed in a pot or in-place after 30 to 60 days cold stratification. It is also in the nursery trade. It will do best below 7000 feet.

Ulmus americana, American Elm, is a slow growing tree up to 100 feet high and 40 feet wide or more. It is found naturally in the Black Hills. It needs regular moisture during the growing season. The leaves turn pale to golden yellow in fall. It can be grown from seed. Cold stratification of 60 to 90 days is often helpful. This species should be planted where there are no other American Elms nearby to protect it from Dutch elm disease.



Ulmus americana, Cheyenne

Plain English as an Option

A quiet upheaval in the chambers of the International Botanical Congress took place at the stroke of midnight this past New Year's Eve. The binomial tradition of scientific nomenclature—using two-word Latin names such as *Homo sapiens* for humans— no longer requires description of new species in Latin or appearing in printed journals. This tradition dates back to the 1753 publication of *Species Plantarum* by Swedish botanist Carl Linnaeus. The new rules give botanists the option of publishing descriptions in English, and to publish in online academic journals and books. The urgency of describing new species was the basis for this change (Miller et al. 2011), expediting work for taxonomic authors and readers alike.

Reference

Miller J, Funk V, Wagner W, Barrie F, Hoch P, Herendeen P (2011) Outcomes of the 2011 Botanical Nomenclature Section at the XVIII International Botanical Congress. *PhytoKeys* 5: 1-3. doi: 10.3897/phytokeys.5.1850

RNAs and SIAs of Wyoming: Sawtooth Palsa-Fen

Protect our permafrost! That would hardly seem like a botanical rallying cry and certainly not a winter newsletter message. Yet Sawtooth Palsa-Fen is one of the Wyoming's crown jewels and permafrost pockets among potential and designated natural areas. It has been in the Society spotlight for a long time (Evert 1984), documented by early Society officers (Collins et al. 1981) after its original discovery (Pierce 1961).

A palsa fen is a product of climate and vegetation, a raised "hill" of peat that develops over permafrost. Some natural areas protect rare plants. Others potentially protect ecosystem features, including this paleontological relict of the only palsa fen in the contiguous United States. Additional information on Sawtooth Palsa-Fen is in Mellmann-Brown (2004), Heidel et al. (2010), and Jones et al. (2011).

Thus, the Wyoming Native Plant Society Board responded when the Shoshone National Forest opened the Forest Plan amendment to public comment this year on whether or not to designate Sawtooth Palsa-Fen as a Special Interest Area. Also up in the air was whether or not to designate one other potential Special Interest Area (SIA) and 8 potential Research Natural Areas (RNAs) on the Forest, sites long known to the state botany community. These are not just interesting areas to visit or read about, but are some of the best outdoor laboratories, habitat for sensitive species, prime vegetation examples and irreplaceable parts of the state. All SIAs and RNAs that have cleared the Forest Plan process in Wyoming are listed below; a few can even be "visited" on Google Earth.

Research Natural Areas and Special Interest Areas of Wyoming

Area\ National Forest\ Region*	Ashley	Bighorn	Black Hills	Bridger-Teton	Medicine Bow	Shoshone	Targhee	Wasatch-Cache
Afton Front RNA – R4				X				
(Battle Mountain RNA – R2)					X			
(Browns Peak RNA – R2)					X			
Bull Elk Park RNA – R2		X						
Gros Ventre RNA – R4				X				
Hay Creek RNA			X					
(LeBonte Canyon RNA – R2)					X			
(Leigh Creek RNA – R2)		X						
Line Creek Plateau RNA – R1/R2						X		
(Mann Creek RNA – R2)		X						
Osborn Mountain RNA – R4				X				
(Platte Canyon RNA – R2)					X			
Savage Run RNA – R4					X			
Shell Canyon RNA – R2		X						
Snowy Range RNA – R2					X			
Swift Creek RNA – R4				X				
Ashenfelder Basin SIA – R2					X			
Big Fall Creek SIA – R4				X				
Centennial Ridge SIA – R2					X			
Dugout Gulch SIA – R2			X					
Kendall Warm Springs SIA – R4				X				
Kettle Ponds SIA – R2					X			
Medicine Bow Peak SIA – R2					X			
Preacher Rock Bog SIA – R2		X						
Ribbon Forest SIA – R2					X			
Sunken Gardens SIA – R2					X			
Swamp Lake SIA – R2						X		
Tramway Trail SIA – R2					X			
Upper Sand Creek SIA – R2			X					
White Rock Canyon SIA – R2					X			

*R2=Rocky Mountain Region; R4=Intermountain Region. Sites in parentheses are approved but not made final.

Definitions:

Research Natural Areas are part of a national network of ecological areas designated in perpetuity for research and education and/or to maintain biological diversity on National Forest System lands. Research natural areas are for nonmanipulative research, observation, and study. They also may assist in implementing provisions of special acts, such as the Endangered Species Act and the monitoring provisions of the National Forest Management Act.

Special Interest Areas recognize archaeological, botanical, geological, historical, scenic, paleontological and zoological or other special characteristics or unique values. They are designated to protect and manage for public use and enjoyment and may include the protection and management of threatened, endangered or sensitive species and other elements of biological diversity; recreation or cultural significance; or historic importance.

References

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- Mellmann-Brown, S. 2004. Botanical and Ecological Inventory of Selected Peatland Sites on the Shoshone National Forest. Report prepared for Shoshone National Forest by Wyoming Natural Diversity Database, Laramie, WY. Posted electronically at: <http://www.uwyo.edu/wyndd/>.
- Pierce, W.G. W.G. 1961. Permafrost and thaw depressions in a peat deposit in the Beartooth Mountains, northwestern Wyoming. *USGS Professional Paper B424*.
- USDA Forest Service – Rocky Mountain Research Station. Research Natural Area listing for western regions of the United States. Posted electronically at: <http://www.fs.fed.us/rmrs/research-natural-areas/>.
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Payson's milkvetch, continued from p. 1

milkvetch appears to tolerate and even require disturbance. Burning may play a role in this early succession appearance and in its distribution, possibly with a lag time (estimated at 15 years) needed for colonization.

Fast-forward a decade or two....Payson's milkvetch remains on the sensitive species list but no new data were available. With the advent of Geographic Information Systems, wildfire burn areas (1991-2010) that had been digitally mapped on Bridger-Teton NF could easily be superimposed on species distribution and population data to identify those most likely to have burned. In 2011, Klara Varga took on a Payson's milkvetch pilot project in collaboration with Wyoming Natural Diversity

Database and Bridger-Teton National Forest. One of the recently-burned landscapes was at North Horse Creek, the type locality, where two large wildfires recently charred the landscape. There, Payson's milkvetch grew on bare ground devoid of litter and duff. In fact, the largest population that Varga documented among seven surveyed in 2011 was at the type locality (250+ plants), a burned forest landscape again (Varga survey data; Heidel 2012).

Will new surveys in other burns produce new Payson's milkvetch populations? Will the population at the type locality expand in keeping with the lag response? We don't have the answers but we now have evidence of a seed bank and a glimpse of greater species' viability under the current fire management policy on the Forest.

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